

ADJUSTABLE SCAFFOLD HANGAR

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BACKGROUND OF THE INVENTION

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This invention relates to the field of building construction. More particularly, an adjustable and collapsible scaffold hanger is disclosed which enables a workman to quickly and economically attach walk boards to a wall under construction.

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In the construction of buildings, houses, and other structures, it is common for a workman to require scaffolding in the construction process. Scaffolding may be utilized so that workmen can reach the upper parts of a wall or other vertical surface that is not accessible when the workman is standing on the ground alone. One type of scaffolding is built up from the ground, using steel or other sturdy materials. The ground scaffolding itself rests on the ground and is built up vertically as required by the construction job.

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Another type of scaffolding in use in the construction trades involves suspended wall scaffolding structures. These suspended scaffolding structures are hung from the wall and walk boards are placed on the hanging structure. Various refinements and adjustments of such wall scaffold structures have been disclosed in the prior art.

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One type of suspended wall scaffold structure was disclosed in the 1996 patent issued to Lapp, U.S. Patent number 5, 503, 358. Lapp disclosed an upper hanging bracket engaging the top of a wall to support a main, vertical member that is lower and parallel to the wall. A platform support projects from the main vertical member support and

supports the walk board planks. A brace is affixed between the horizontal and vertical sections of the Lapp hanger bracket. One drawback in the Lapp disclosure is that the walk board planks must be very near the top of the wall. In instances in which the workmen must work further down from the top of the wall itself, the Lapp structure would not be efficacious. It is an object of this invention to provide a hanging scaffold system that allows the workmen to work approximately four to six or more feet from the top of the wall using the scaffold.

Another type of hanging scaffold support was disclosed in the 2000 patent issued to Smith, et al., U.S. Patent Number 6, 053, 280. The Smith device also includes a deck support that hangs from an adjustable top plate. The deck support has a vertical leg and a horizontal foot extending laterally from the leg. The foot is provided with a climber attachment and is therefore somewhat adjustable. Smith provides for different widths of the wall with an adjustable top bracket and provides, partially, for a scaffold structure that is adjustable in height. One of the disadvantages of Smith is that it does not provide length sufficient to adjust for many applications of a hanging scaffold system. It is another object of this invention to provide a hanging scaffold structure that is adjustable over a number of feet, usually four to six feet, utilizing pop-pins for the adjustment.

Most of the scaffold structures in the prior art disclose a hanging bracket at the top of the structure for securing over a wall. The entire scaffold structure is meant to be used along one planar wall. The provision for the scaffold structure to go be placed around corners of a perpendicular wall has not been addressed. Often, such walls are partially constructed and are at a 90-degree angle to the wall upon which the worker must finish work. It is yet another object of this invention to provide a hanging scaffold system that is capable of hanging on walls that

are perpendicular to the surface upon which the workman must perform his work.

Yet another object of this invention is to provide a hanging scaffold system that is readily collapsible and easily transportable in a workman's truck due to various adjustments and disassembling points.

Other and further objects of this invention will become obvious upon reading the below described specification.

BRIEF DESCRIPTION OF THE DEVICE

An adjustable scaffold hanger system includes an upper, adjustable hanging bracket. The hanging bracket is adjustable for different widths of walls by use of a pop-pin. A vertical riser is also vertically adjustable using adjusting holes and a pop-pin. The vertical riser can be adjusted such that the walk planks are anywhere from two feet to six or eight feet from the top of the wall. At the lower end of the vertical riser is a horizontal walk board support. This horizontal walk board support is strengthened by a brace between the vertical and horizontal sections. The walk board support also includes a vertical outer end for attaching a railing or other safety device.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

Figure 1 is a side view of the device shown in place on a vertical wall.

Figure 2 is a perspective view of the device, showing the upper and lower portions separated.

Figure 3 is a perspective view of the upper section of the device, showing the upper hanger bracket and its adjustments.

5 Figure 4 is a perspective view of the lower section of the device, showing the walk board support mechanism.

Figure 5 is a perspective view of the device shown in its 90-degree or swivel mode on a perpendicular wall.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

15 A collapsible, adjustable scaffold hanger support is presented. The hanger support enables a workman to quickly and efficiently attach scaffolding to a wall or other vertical structure. Each pair of hanger supports is identical. The hanger supports are secured to a wall or other vertical structure and are spaced apart such that walk boards are
20 supported horizontally to the ground. The scaffolding may be adjusted such that the walk boards may be either close to the top of the wall or near the middle of the wall.

25 A horizontal walk board support 1 is perpendicularly attached to the lower end of a vertically adjustable vertical riser 2 by welding or other means at a corner. The horizontal walk board support member is attached at a 90-degree angle to the adjustable vertical riser 2 and is essentially parallel to the ground when in place on a wall.

30 At the upper end of the vertical riser 2 is an upper adjustable hanger bracket 3. The hanger bracket is perpendicular to the vertical riser as

shown. The details of the construction and operation of the hanger bracket will be discussed later.

5 The horizontal walk board support 1 has an outer, essentially vertical walk board support edge 4. This walk board support edge 4 limits the movement of the planks 7. One end of a safety rail, rope, netting, or other safety feature may be attached to one of the pair of outer support edges while the other end of the safety device is attached to the other outer support edge.

10 The horizontal support 1 and vertical riser 2 are strengthened by a support/riser brace 5. This brace 5 is permanently secured to both the lower portion of the vertical riser 2 and the horizontal support 1, as best shown in Figure 1.

15 The purpose of this adjustable scaffold hanger system is to allow for the placement of horizontal walk boards 7 next to a vertical work wall 6.

20 Turning now to Figure 2, details of the structure of the adjustable scaffold hanger are disclosed. Attached at the connecting corner of the horizontal support 1 and the vertical riser 2 is a lower support flange 8. This lower support flange 8 is "L" shaped and is commonly made from angle iron as shown. This lower support flange 8 distributes the force applied against the wall in an even manner when the scaffold hanger is attached to the wall. The lower support flange 8 thus enables the structure to be conveniently hung from a wall without piercing the wall or otherwise damaging the structure to which it is detachably secured.

25 The adjustable vertical rise comprises two main sections, a lower, outer vertical riser section 9 and an upper, inner vertical section 10. The upper section slides inside the lower section and is adjustable by means of a lower riser securing hole 11 in lower section 9 and upper riser parallel

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adjusting holes 12 in upper riser section 10. (The parallel adjusting holes 12 are for use in the mode where it is desired to have the hanger secured to the wall upon which the work is being done, rather than on a perpendicular wall.) In order to adjust the distance between the top of the working wall 6 and the level of the planks 7, one need only adjust the vertical length of riser 2. This is accomplished by lining up the appropriate adjusting hole and inserting a pop-pin 18 as shown in Figure 1.

The adjustable scaffold hanger system is removably secured to the wall by means of the upper adjustable hanger bracket shown generally at 3. This upper hanger bracket 3 comprises an outer horizontal hanger support 13 that is permanently attached to the top of the upper vertical riser section 10. The outer hanger support is attached perpendicularly to the vertical riser 2 at the upper end of the riser as shown in Figures 2 and 3.

Slidably located inside the outer hanger support 13 is an inner horizontal hanger adjusting piece 14. This inner adjusting piece 14 has attached to it an upper hanger flange 15, as best shown in Figure 2. This upper hanger flange 15 is "L" shaped as shown and is generally made from angle iron. The upper hanger flange 15 is secured in a perpendicular position to the inner adjusting piece 14 as shown.

Since construction walls are of varying widths, it may be desirable to adjust the width between the upper hanger flange 15 and the vertical riser 2. This is accomplished by using a hanger support securing hole 16 located in the outer horizontal support 13 and a plurality of hanger support adjusting holes 17 located in the inner adjusting piece 14.

Both the adjustable vertical riser 2 and the adjustable hanger piece 14 are locked in place by the use of pop-pins 18. These holes and pop-pins adjust the vertical height of the planks 7 or the horizontal width of the hanger bracket 3, by aligning the appropriate holes and placing the pop-pin 18 through the aligned holes.

Another unique feature of this device is provided by the lower riser perpendicular swivel adjusting holes 19 as shown in Figures 2 and 5. In applications where it is desired to hang this scaffold device in a 90-degree corner between a work wall 6 and a perpendicular wall 6', the upper inner vertical riser section 10 is rotated 90-degrees and is then secured to the lower vertical riser section 9 by use of pop-pin 18, as shown in Figure 5. The hanger flange 15 is placed over and secured to a perpendicular wall 6', while the lower support flange 8 remains parallel to the work wall. The walk board support 1 remains perpendicular to the work wall as shown. The holes 19 for the perpendicular swivel mode are located on a surface perpendicular to the holes 12 for the parallel riser adjusting mode.

It is to be appreciated that this particular adjustable scaffold hanger has adjustments for both the width of the wall and the height of the walk board planks from the top of the wall. Using this unique device, the vertical distance between the top of the wall or other structure and the walk boards can vary over a matter of feet, usually two to six feet. Other adjustments to the length of the horizontal walk board support 1 could be made using horizontal support adjusting holes and a pop-pin such as described for the adjustable vertical riser and the upper adjustable hanger bracket 3.

The hanger bracket is easily installed and readily removed. In addition, since the longer vertical sections are connected by a pop-pin

system, they are readily collapsible for transportation in a workman's truck. In one additional embodiment the horizontal walk board support 1 is hinged to the vertical riser 2 such that it folds to a parallel position with respect to the riser for ease of transportation. In this embodiment the support/riser brace 5 also collapses at its midsection to facilitate the folding of the horizontal support.

The wide flange on the top hanger bracket and the bottom plate make the device more stable in several respects. The wide flange distributes the forces applied to the wall and thus the device will not damage the wall when it is put in place. In addition, any rotational forces encountered between the pair of brackets would be eliminated or greatly minimized due to the length of the geometric configuration and the general dimensions of the upper and lower flange plates.

In utilizing this device, a pair of adjustable scaffold hangers is hung from a wall a suitable distance apart. Once the pair of scaffold hangers is secured to the wall, horizontal walk boards 7 may be placed between left and right horizontal walk boards support 1 to provide suitable scaffolding for a workman.

It is to be appreciated that the precise structure described herein is meant as means of illustration only and not as a limitation. Minor variations to the construction materials, cross sections, means for adjusting the vertical and horizontal members and other minor variations are still within the keeping and spirit of this disclosure.